

USSN 10/813,367

Response

REMARKS/ARGUMENTS

Claims 1, 4, 5, and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Delphin et al. (4,717,505) in view of Smalley et al. (6,183,714). The Examiner states that Delphin discloses a composition comprising polyethylene, at least about 3 parts by weight, based on the weight of the polyethylene, carbon fiber, and a conductive carbon black other than carbon fiber, the carbon black being present in an amount at least about 10 parts by weight, based on the weight of the polymer. The Examiner admits that Delphin does not disclose the composition comprising carbon nanotubes nor the composition used to surround the conductor. The Examiner relies on Smalley et al. for the disclosure of a composition comprising carbon nanotubes. Th Examiner further states that it would have been obvious to one skilled in the art to use the composite of Delphin to surround the conductor since the composition provides both electrical and mechanical properties. The Applicants respectfully traverse.

The Applicants believe that the present invention exhibits surprising results in view of the prior art. In particular, the prior art would not lead one skilled in the art to expect the synergistic effects on melt viscosity and volume resistance achieved by using a blend of carbon nanotubes and carbon black. Also, the Applicants believe that the current invention demonstrates an unexpected long term stability in volume resistivity.

The Examiner will note at page 18, Table 1, that Example 1 reports a composition of which 38 weight percent is carbon black. This table also reports in Example 4 in which the composition is 19 weight percent carbon black and 10 weight percent carbon nanotubes (for a total of 29 weight percent which, for purposes of these examples, is approximately the same as 38 weight percent).

The Examiner will also note that Table 1 reports the viscosity for both of these compositions, and the viscosity of the Example 1 composition (all carbon black) is significantly higher at various shear rates than the viscosity of the Example 4 composition. The lower viscosity of Example 4 is important to a more facile in the processing of the composition into a semiconductor shield layer. This lower viscosity is even more striking when compared against the composition of Example 2 which contains

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20 weight percent carbon nanotubes and 0 weight percent carbon black. The viscosity of the composition of Example 2 is even greater across the various shear rates than that of the composition of Example 1.

In addition, at page 20, Table 2 of the specification, the volume resistivities of the compositions of Examples 1-4 are reported. The Examiner will note that not only is the volume resistivity of the composition of Example 4 comparable to that of the composition of Example 1, but it is much more stable over various thermal cycles than the volume resistivity of the Example 1 composition.

Claims 2, 3, 6, and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Delphin et al. in view of Smalley et al. as applied to Claim 1 above, and further in view of Burns, Jr. (4,857,232). The Examiner admits that the combination of Delphin et al. and Smalley et al. do not disclose the use of a copolymer of ethylene and then unsaturated ester which are vinyl esters. The Examiner relies on Burns, Jr. to disclose the composition comprising of copolymer of ethylene and unsaturated esters. The Applicants traverse this rejection for the same reasons applied above to the rejection of Claims 1, 4, 5, and 7.

The Applicants believe that the claims are patentable for the reasons stated above. The Applicants therefore request that the Examiner reconsider and withdraw his rejections and issue a Notice of Allowance.

A one month extension fee of \$120.00 is believed to be due for the filing of this Response. Such fee should be charged to Deposit Account 23-2053. No other fee or

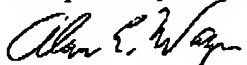
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petition is believed due and any petition due should be considered to be provisionally made.

Respectfully submitted,



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